REMARKS

Claims 3-8, 12-14, and 18-20 have been amended; claims 1, 2, 9-11, and 15-17 have been canceled without prejudice, disclaimer, or waiver; and claims 21-23 have been added. Presently, claims 3-8, 12-14, and 18-23 are pending in the present application. Reconsideration of the pending claims is earnestly solicited.

Response to 35 U.S.C. §102 Rejection

Claims 1-20 stand rejected under 35 U.S.C. §102(e) as allegedly being anticipated by *Grey et al.* (U.S. Patent No. 6,401,220). With respect to claims 1, 2, 9-11, and 15-17, which have been canceled herein, the rejection is considered moot. With respect to the remaining claims, Applicants respectfully traverse the rejection on the grounds that *Grey et al.* does not disclose each and every element of independent claims 21, 22, or 23.

A. Background

The meaning of the term "data type" appears to be an issue in the present application. As background, it should be noted that every "variable" has a data type. The data type defines the type of data values that a variable may contain. Data types also establish the range and even bit length, or size, of values that a variable can contain. Data types can usually be divided into two groups -- standard data types and custom data types.

"Standard data types" establish that a variable's set of data will have values with predefined characteristics. For instance, if the data type of a variable is an "integer" data type, then the variable can only contain integer values. For instance, a "short" integer data type limits the variable to a range of numbers that can be represented by a 16-bit value. In addition to "integer" data types, other standard data types might include floating point data type, character data type, string data type, or pointer data type. The list of available "standard data types" depends on the computer language being used such that different computer languages might have different standard data types.

Certain computer languages can also include "custom data types," which allow a programmer to create a data type according to specific needs. Custom data types can be created with custom characteristics regarding type, size, and range.

B. *Grey et al.*

Although *Grey et al.* discloses a system that improves upon the test executive system, the reference fails to improve upon standard data types or customized data types. Instead, *Grey et al.* provides a system that includes "step types." Expanding upon the traditional test executive computer program, *Grey et al.* introduces new concepts and features, one of which includes these "step types" (col. 3, lines 6-11). *Grey's* system includes various types, including step types, custom data types, and standard data types. *Grey et al.* therefore makes a distinction between data types and step types, and even defines a type as either a data type or a step type (col. 3, lines 35-38). *Grey et al.* fails to describe improvements or modifications to data types (custom or standard), but instead describes "*step types*" in detail.

In col. 4, lines 47-64, *Grey et al.* discloses that a sequence comprises a series of steps, wherein a step is typically a test performed on an instrument. In a test sequence with a number of steps, the user oftentimes desires a number of steps that have some commonality of functionality and/or properties. The purpose of the step type is to define common properties and/or operations associated with a plurality of steps, thereby eliminating the need for hard coding the functionality and/or properties in each instance. Furthermore, a step type essentially comprises a custom set of properties and/or operations associated with a step. The step type defines common operations and/or data associated with a test module. Essentially, *Grey et al.* appears to be concerned only with the concept of "step types" and does not attempt to improve upon conventional data types. All references to data types in *Grey et al.* are directed to the standard and custom data types that are well known in the art.

C. Claim 21

Independent claim 21 is believed to be allowable over *Grey et al.* The new claim is directed to a variable for use in a computer program, the variable comprising a data type, a name, and a numerical value. The claim includes the aspect that ***"the data type further comprises a first algorithm."*** *Grey et al.* fails to disclose a data type comprising an algorithm. Although the Office Action seems to allege that *Grey et al.* discloses a data type having an algorithm, referring to col. 6, lines 1-5 and col. 25, lines 31-34 for support, it should be noted, however, that col. 6, lines 1-5 actually refers to a plurality of steps of a test sequence and executing steps of a first step type.

Grey's steps are not the same as an algorithm as claimed, but rather are related to test sequences. Also, a step type is definitely not a data type. The passage in col. 25, lines 31-34 refers to storing a type definition when a data type or step type is created, as is well-known, and fails to support the alleged implications in the final Office Action. It is clear from these passages that *Grey et al.* does not provide a data type comprising an algorithm as claimed.

Furthermore, claim 21 includes that the first algorithm is ***"automatically executed when a routine of the computer program attempts to access the numerical value of the variable."*** A numerical value of a variable might eventually be accessed by a routine of a computer program, such as during a read or write operation. When the routine attempts to access this numerical value, the first algorithm is executed to process the numerical value according to predefined manipulations of the algorithm. The Office Action seems to allege that *Grey et al.* discloses the claimed feature. Actually, *Grey et al.* refers to automatically storing a type definition. This, of course, is clearly not the same as the feature of claim 21 as highlighted above. The reference fails to disclose executing an algorithm when a routine attempts to access the numerical value of the variable.

Claim 21 also discloses that the ***"first algorithm begins processing the numerical value for providing an updated numerical value"*** and that this is performed ***"before the routine accesses the numerical value."*** *Grey et al.* again fails to disclose these elements. For at least these reasons, Applicants assert that claim 21 is allowable over *Grey et al.* and respectfully request that the Examiner withdraw the rejection.

D. Claim 22

Independent claim 22 is also believed to be allowable over *Grey et al.* The new claim 22 is directed to a computer program for verifying the integrity of an electrical circuit. The computer program accesses a variable that comprises a data type, a name, and a numerical value. The claim includes logic configured to execute at least one test routine, wherein ***"the data type further comprises a first algorithm."*** *Grey et al.* fails to disclose a data type comprising an algorithm. The Office Action seems to allege that *Grey et al.* discloses a data type having an algorithm, referring to col. 6, lines 1-5 and col. 25, lines 31-34 for support. However, col. 6, lines 1-5

actually refers to a plurality of steps of a test sequence and executing steps of a first step type. The Office Action seems to imply that test sequences are the same as algorithms and that step types are the same as data types. Both of these implications are unfounded and are contrary to the teachings of *Grey et al.* The passage in col. 25, lines 31-34 refers to storing a type definition when a data type or step type is created, as is well-known. It is clear from these passages that *Grey et al.* does not provide a data type comprising an algorithm as claimed.

Furthermore, claim 22 includes that the first algorithm is ***"automatically executed when the at least one test routine attempts to access the numerical value of the variable."*** The Office Action seems to allege that *Grey et al.* discloses the claimed feature. Actually, *Grey et al.* refers to automatically storing a type definition, which clearly is not the same as the claimed feature. *Grey et al.* fails to disclose, or suggest in any way, executing an algorithm when a routine attempts to access the numerical value of the variable.

Claim 22 discloses ***"logic configured to execute the first algorithm before the at least one test routine accesses the numerical value, the first algorithm processing the numerical value to provide an updated numerical value of the variable."*** *Grey et al.* again is deficient and fails to disclose this feature as well. For at least these reasons, Applicants assert that claim 22 is allowable over *Grey et al.*

E. Claim 23

Independent claim 23 is also believed to be allowable over *Grey et al.* Claim 23 is directed to a method for accessing a variable that has a data type. The claim includes ***"incorporating a first algorithm into the data type."*** *Grey et al.* fails to disclose an algorithm incorporated into a data type as claimed.

Furthermore, claim 23 includes that the first algorithm is configured to ***"automatically execute when a routine of the computer program attempts to access the numerical value of the variable."*** When a numerical value of the variable might be accessed, such as during a read or write operation, the first algorithm is executed to process the numerical value. *Grey et al.*, in contrast to claim 23, teaches automatically storing a type definition. The reference fails to disclose executing an algorithm when a routine attempts to access the numerical value of the variable.

Claim 23 also discloses ***"determining when the routine attempts to access the numerical value," "executing the first algorithm to process the numerical value for providing an updated numerical value"*** and ***"allowing the routine to access the updated numerical value."*** *Grey et al.* fails to disclose these elements. For at least these reasons, Applicants assert that claim 23 is allowable over *Grey et al.* and respectfully request that the Examiner withdraw the rejection.

F. Claims 3-8, 12-14, and 18-20

Dependent claims 3-8, 12-14, and 18-20 are believed to be allowable for at least the reason that each of these claims depends from one of the independent claims 21, 22, and 23, which Applicants contend to be allowable as stated above.

CONCLUSION

In light of the foregoing amendments and for at least the reasons set forth above, Applicants respectfully submit that all rejections have been traversed, accommodated, and/or rendered moot, and that claims 3-8, 12-14, and 18-23 are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned at (770) 933-9500.

Respectfully submitted,

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Evelyn Sanders

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